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| [http://kis-in.rubiconatlas.org/common_images/aardvark_bw.gif?v=Atlas7.2.4.77](javascript:window.open(%22%22,%22_parent%22);window.close();) | **Unit Map 2011-2012**  ***Kodaikanal International School*** [***Shand, Anuranjan***](javascript://Subject=&ClientID=0&To=AnuranjanS%40kis.in&ToName=Shand%2C%20Anuranjan&EmailBody=&)***/***[***Chemistry HL 12***](http://kis-in.rubiconatlas.org/c/pi/v.php/Atlas/Browse/View/Map?YearID=2012&SchoolID=8&CourseType=&strkeys=&CurriculumMapID=380&)***[Course Description](http://kis-in.rubiconatlas.org/c/pi/v.php/Atlas/Browse/UnitMap/View/Default?RestrictUnitName=1&UnitID=4843&YearID=2012&SchoolID=8&TimePeriodID=62&CurriculumMapID=380&strkeys=&mode=browse&) / Grade 12 (KIS Diploma Programme)***  July 29, 2011, 11:30AM | | | | [http://kis-in.rubiconatlas.org/images/school_logo_small.png?v=Atlas7.2.4.77](javascript:window.open(%22%22,%22_parent%22);window.close();) |
| **Unit: Oxidation and Reduction** (7, 3 Cycles) [http://kis-in.rubiconatlas.org/common_images/icon_cal.jpg?v=Atlas7.2.4.77](http://kis-in.rubiconatlas.org/c/pi/v.php/Atlas/Browse/View/UnitCalendar?CurriculumMapID=380&view=browse&) [http://kis-in.rubiconatlas.org/common_images/note.png?v=Atlas7.2.4.77](http://kis-in.rubiconatlas.org/c/pi/v.php/Atlas/Browse/UnitMap/View/Default?RestrictUnitName=1&UnitID=4843&YearID=2012&SchoolID=8&TimePeriodID=62&CurriculumMapID=380&strkeys=&mode=browse&) | | | | | |
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| |  |  | | --- | --- | | **IB Expectations/ Assessment Criteria** |  | | | | | | |
| |  |  | | --- | --- | | **Approach** |  |   Interactive | | | | |  |  | | --- | --- | | **Significant concept(s) / Considerations** |  |   oxidation is loss of electron and reduction is gain of electron or in other words oxidation leads to increase in oxidation number but in reduction it decreases. | |
| |  |  | | --- | --- | | **Guiding Questions** |  |   Can oxidation reduction happen together or separately, if so how can it be detected Can oxidation and reduction happen together, if yes, what are the indicators of that. Where can I apply my knowleged of oxidation and reduction in regular life. | | | | |  |  | | --- | --- | | **Learner Profile** |  |  |  |  | | --- | --- | | * Inquirers * Knowledgeable * Thinkers * Risk-takers * Reflective |  | | |
| |  |  | | --- | --- | | **Central Idea / Content** |  |   9.1 Introduction to oxidation and reduction  9.2 Redox equations  9.3 Reactivity  9.4 Voltaic cells  9.5 Electrolytic cells  19.1 Standard electrode potentials  19.2 Electrolysis | | | | |  |  | | --- | --- | | **Learning Objectives** |  |   Students learnt oxidation and reduction in terms of electron loss or gain or in terms of increase or decrease in oxidation number. Practical application of oxidation and reduction in storage batteries, and electroplating, or purification or extraction of metals is explained with reference to reactivity series, which sometimes dictates the feasibility of a given reaction. | |
| |  |  | | --- | --- | | [**Assessment**](http://kis-in.rubiconatlas.org/c/pi/v.php/Atlas/Browse/StandardsDetail/View/Default?CurriculumMapID=380&UnitID=4843&YearID=2012&) |  |   **Other Written Assessment**  Errors and uncertainties  **Other Written Assessment**  Worksheet  **Other Written Assessment**  Study of Redox reactions  **Other Written Assessment**  DCP  **Other Written Assessment**  Assignment  **Other Written Assessment**  The Oxidation States of Vanadium, Manganese DCP,CE  **Examination**  Test  **Other Written Assessment**  Electrochemical cells – 1& 2 D | | | | | |
| |  |  | | --- | --- | | **Information Literacy & ICT** |  |   1.       Virtual simulation of the electrolysis of copper (II) sulphate is discussed. | | | |  |  | | --- | --- | | **International Mindedness** |  |   Oxidation number is an universal term, which replaces the older definitions like valance, etc. | | |  |  | | --- | --- | | **TOK** |  |   Are oxidation numbers “real”?  Chemistry has developed a systematic language that has resulted in older names becoming obsolete. What has been gained and lost in this process? |
| |  |  | | --- | --- | | **Strategies / Activities / Differentiation** |  |   This topic is taught with lots of hands on activity and virtual activity. Every lesson is backed up by on the class work which enforced learning. The students who has problem in understanding the basic chemistry behind it were given easier problems for confidence building and then moved to normal main stream set of works | | | | |  |  | | --- | --- | | **Resources** |  |   1.        IB chemistry-Geoff Neuss  2.       Chemistry text book-Catrin Brown  3.       PowerPoint presentations as teaching aid (on core and advanced concepts)  4.       Web resources (teacher tube etc)  5.       Worksheet on  a.       Ionic equations  b.       Oxidation number  c.        Half equations  d.       Oxidizing and reducing agents  Reactivity series | |
| |  |  | | --- | --- | | **Unit Reflections** |  | | | | | | |
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[<< Previous Year](http://kis-in.rubiconatlas.org/c/pi/v.php/Atlas/Browse/UnitMap/View/Default?RestrictUnitName=1&UnitID=4843&YearID=2011&SchoolID=8&TimePeriodID=&CurriculumMapID=380&mode=browse&)